New Highway Capacity Expansion

1. Are the design year total Build condition traffic volumes ≥125,000 annual average daily traffic (AADT) and truck volumes ≥10,000 heavy-trucks per day (8%) in the project vicinity?

   YES – Projected 2035 AADT ranges from 117,000 to 190,000 and projected heavy-trucks range from 3,800 to 17,000. (MAG 9/20/2013)

2. Does the project cause ≥ 6,250 and ≥ 500 increases in AADT and truck volumes, respectively between the Build and No-Build conditions?

   YES – Because this is a new facility, projected increases between the Build and No-Build AADT range from 117,000 to 190,000 and 3,800 to 17,000 additional trucks. (MAG 9/20/2013)

If yes to either of the above questions, it is potentially a project of air quality concern (POAQC) and may require interagency consultation; if no on both, it is not.

Other Considerations:

1. Does the project affect intersections that are of Level-of-Service (LOS) D, E, or F with a significant number of diesel vehicles?

   YES

2. Does the project affect locations, areas or categories of sites that are identified in the PM_{10} or $PM_{2.5}$ applicable implementation plan or implementation plan submissions, as appropriate, as sites of violation or potential violation?

   YES – PM_{10} **Not applicable** - $PM_{2.5}$

3. Is the project considered significant or environmentally controversial with respect to future impact on localized pollutant concentrations (e.g., evaluated using environmental impact statement (EIS) or environmental assessment (EA)? (www.epa.gov/compliance/basics/nepa.html)

   YES – The FHWA considers the potential impact on the project area to be controversial and to generate a great deal of public interest. The project currently has a completed Draft EIS (DEIS).

4. Is the project in a conforming plan and/or TIP?

   YES

Completing a Quantitative Particulate Matter Hot-Spot Analysis

(EPA Office of Transportation and Air Quality EPA-420-F-10-052, December 2010)

1. Determine the need for analysis – is this a project of local air quality concern?

   YES – Both ADOT and the Arizona Department of Environmental Quality (ADEQ) consider this project a POAQC.

2. Determine the approach, models, and data.

   a. Define the project area (area substantially affected by the project, 58 FR 62212) and emission sources.

      The project area encompasses more than 156 square miles. The project area includes the alternative alignments:

      - The north-south alternative alignments area is bordered approximately by McDowell Road to the north, Elliot Road to the south, 51st Avenue to the east, and 107th Avenue to the west. The three highest volume interchanges along the Preferred Alternative will be modeled.

      - The east-west alternative alignment area is bordered approximately by South Mountain Park to the north, the Gila River Indian Community to the south, I-10 to the east, and 51st Avenue to the west.

   b. Determine general approach for modeling the preferred alternative (the W59/E1 Alternatives) and analysis year(s) – year(s) of peak emissions during the time frame of the transportation plan (69 FR 40056).

      Emission rates in 2015, 2025 and 2035 will be estimated using EPA's MOVES2010b program. These analysis years are included in the most recent update to the Maricopa Association of Governments (MAG) regional conformity analysis. Under the Build Alternative emission rates will be developed for the three highest volume interchanges. Each location will be modeled for morning (AM) peak, Midday hours, afternoon (PM) peak, and overnight. PM_{10} emissions will be modeled incorporating operating conditions included in EPA's *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*, publication number EPA-420-B-10-040, December 2010. Based on the most recent MAG Conformity Analysis, the peak year of emissions will be determined and used to quantify PM_{10} emissions associated with the project.

Following the development of peak year emission rates, the three worst-case interchanges and locations expected to have the highest concentrations under the Build Alternative will be selected in consultation with FHWA for detailed dispersion modeling with CAL3QHCR. Traffic projections by link will be used the analysis. CAL3QHCR dispersion modeling will incorporate a 5 year meteorological data set and other guidelines suggested by EPA guidance for quantitative PM_{10} analyses.

As noted in EPA's "Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas" (December 2010), to avoid unnecessary work, EPA recommends modeling the build scenario (including background concentrations) first. In those instances if the design values under the build scenario are less than or equal to the relevant PM10 NAAQS, then the project conforms and no additional modeling is required.

In the event that the design value for the build scenario exceeds the PM10 NAAQS, the no-build scenario (without the South Mountain project) will be modeled. Under that scenario (and following EPA guidance), if the design values for the build scenario are less than or equal to the design values for the no-build scenario , then the project meets the conformity rule's hot-spot requirements.

In either instance if the project fails to meet conformity requirements, mitigation and/or control measures will be considered and additional modeling will be completed to ensure that the build scenario is less than or equal to the PM10 NAAQS or the no-build scenario, as applicable.

Vehicle PM_{10} exhaust emissions are expected to decrease substantially over time; however, brake and tire wear, and re-entrained road dust emissions are not expected to decrease. Re-entrained road dust will be incorporated into model results using emission rates provided by MAG in its most recent Conformity Analysis.

Roadway configurations will be based on available information, comparable freeway designs such as the San Tan Freeway, and will be consistent among the alternatives.

c. Determine National Ambient Air Quality Standards (NAAQS) and Particulate Matter types to be evaluated.

   The evaluation will be performed for PM_{10} with the applicable PM_{10} 24-Hour standard (150 $\mu g/m^3$).

d. Select emissions and dispersion models and methods to be used.

   The PM_{10} emission factor model to be used in this analysis is the EPA model MOVES2010b (revised) released on October 30, 2012. Re-entrained road dust will be incorporated into model results using emission rates provided by MAG. PM_{10} background concentrations will be determined in consultation with MAG, ADOT and FHWA and included with model results. The analysis of PM_{10} impacts will follow the guidelines established by the EPA in *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*, publication number EPA-420-B-10-040, December 2010.

e. Obtain project-specific data (e.g., fleet mix, peak-hour volumes and average speed).

   New socioeconomic subarea projections based on the 2010 U.S. Census and Arizona Department of Administration (ADOA) county-level projections have been approved by the MAG Regional Council. Based on these new projections, revised traffic data were provided by MAG following completion of the updated traffic projection models; new projections were also provided for truck traffic.

   Fleet mix, vehicle hours travelled (VHT), travel speeds by link and hour, Inspection/Maintenance (I/M) Programs, fuel formulation, fuel supply, age distribution, and other MOVES inputs will be based on MAG data for years 2015, 2025 and 2035 (MAG personal communication from Taejoo Shin 10-17-13).

   Meteorological inputs to MOVES will be based on data from the Phoenix Sky Harbor Airport (surface) and Tucson International Airport (upper air) and be consistent with MAG inputs to MOVES.

3. Estimate on-road motor vehicle emissions using MOVES.

   Using data discussed in Step 2, MOVES PM_{10} emission factors will be calculated for the various roadway variables, using MOVES at the Project scale, and used for input to CAL3QHCR.

4. Estimate emissions from road dust, construction, and additional sources.
   a. Estimate road dust emissions using AP-42 Paved Roads (13.2.1, 2011)

      Re-entrained road dust will be estimated using emission rates provided by MAG. Fugitive dust PM_{10} emission factors for paved roads were calculated using the AP-42 equation and the MAG

region approved silt loading values and other MAG-approved input parameters.

b. Do emissions from other sources need to be considered?

NO - This was agreed to during interagency consultation. Construction dust does not need to be modeled, and there are no major freight terminals or other facilities that need to be included in the model.

5. Select air quality dispersion model, data inputs, and receptors.
   a. Obtain and input required site data (e.g., meteorological).

Five years of surface meteorological data (2008 - 2012) from the Phoenix Sky Harbor Airport and five years of upper air data (2008 - 2012) from the Tucson International Airport will be provided by ADOT and used with CAL3QHCR.

b. Input MOVES and AP-42 outputs (emission factors).

Emission factors from MOVES and AP-42 re-entrained road dust emissions will be incorporated into CAL3QHCR model inputs.

c. Determine number and location of receptors, roadway links, and signal timing.

Receptors will be selected to estimate maximum impacts associated with the roadway and will follow EPA guidance recommendations for receptor placement in CAL3QHCR; receptor height will be set to 1.8 meters. Wind distribution patterns will be reviewed to assist in the selection of receptor locations impacted during stable atmospheric conditions; additional receptors will be located downwind of the modeled roadway. Receptor placement will be based on guidance in EPA-420-B-10-040, Section 7.6.2.

Roadway links will be defined by common characteristics; signal times will be used for queue links and will be based on applicable guidelines.

d. Run air quality dispersion model and obtain concentration results.

CAL3QHCR will be run for each quarter and year of meteorological data for the build, no-build and alternative locations selected for detailed dispersion analysis. Model results will be used to estimate maximum 24-hour PM_{10} concentrations.

6. Determine background concentration using existing monitors in the nonattainment or maintenance area representative of the project area.

Ambient monitoring data will be evaluated and selected carefully to determine appropriate background concentrations for the project area. Although the South Mountain project area includes monitoring stations with some of the highest PM_{10} concentrations in the valley (West 43rd Avenue Site), these concentrations are directly related to industrial and resource mining activities near the monitoring stations and are not representative of the ambient PM_{10} concentrations for the project area. To obtain representative background concentrations, data from a monitoring station in the region that is not impacted by local sources should be used. Data from all monitoring stations in the region will be reviewed to determine the most appropriate value through interagency consultation.
The MAG 2012 Five Percent Plan (Plan) demonstrates attainment of the 24-hour PM_{10} standard for three areas, including portions of the project area. The background values used in the Plan were 14.9 $\mu g/m^3$ for wind speeds less than or equal to 12 miles per hour (mph) (5.4 meters per second [m/s]) and 21.9 $\mu g/m^3$ for wind speeds greater than 12 mph (5.4 m/s). These values were based on data collected at a remote location approximately 30 miles west of the boundary of the project area.

At this time, a background concentration has not been determined; the selection of a background concentration will require coordination and consultation with ADOT, FHWA, and ADEQ. If EPA takes action on the 5% plan before the release of the FEIS, the MAG background value will be used. This approach was agreed to under interagency consultation.

7. Calculate design values and determine conformity.

   a. Add step 5 results to background concentrations to obtain values for the Build scenario.

The 6th highest 24-hour concentration obtained over the 5 years of data for each receptor will be identified. Of these, the highest will be identified. This value will be added to the background concentration and rounded to the nearest $10\mu g/m^3$; this is the highest design value in the Build scenario.

   b. Do the design values allow the project to conform?

The design values will be compared with the 24-hour NAAQS. If the highest build design value is less than or equal to the NAAQS, the project is in conformity. If the build design value is over the NAAQS, the No-build scenario will also be evaluated and compared to the build scenario.

8. Consider mitigation or control measures if the design values are above the NAAQS.

November 1, 2013

Ambient monitoring data will be evaluated and selected carefully to determine appropriate background concentrations for the project area. Although the South Mountain project area includes monitoring stations with some of the highest PM_{10} concentrations in the valley (West 43rd Avenue Site), these concentrations are directly related to industrial and resource mining activities near the monitoring stations and are not representative of the ambient PM_{10} concentrations for the project area. To obtain representative background concentrations, data from a monitoring station in the region that is not impacted by local sources should be used. Data from all monitoring stations in the region will be reviewed to determine the most appropriate value through interagency consultation.
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At this time, a background concentration has not been determined; the selection of a background concentration will require coordination and consultation with ADOT, FHWA, and ADEQ. If EPA takes action on the 5% plan before the release of the FEIS, the MAG background value will be used. This approach was agreed to under interagency consultation.

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    b. Do the design values allow the project to conform?

        The design values will be compared with the 24-hour NAAQS. If the highest build design value is less than or equal to the NAAQS, the project is in conformity. If the build design value is over the NAAQS, the No-build scenario will also be evaluated and compared to the build scenario.

8. Consider mitigation or control measures if the design values are above the NAAQS.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

December 4, 2013

Rebecca Yedlin
Federal Highway Administration, Arizona Division
4000 North Central Avenue, Suite 1500
Phoenix, Arizona 85012-3500

Subject: EPA Comments on the PM10 Hot Spot Modeling Protocol for the South Mountain Freeway (Loop 202), I-10 (Papago Freeway) to I-10 (Maricopa Freeway), TRACS No. 202L MA 054 H5764 01L, Federal Project No. NH-202-D(ADY)

Dear Ms. Yedlin:

The U.S. Environmental Protection Agency has reviewed the PM10 Hot Spot Modeling Protocol for the South Mountain Freeway, submitted to our agency on November 1, 2013. The submittal of the modeling protocol for review, and our comments on this document provided below, represent the first interagency coordination between our agencies to partially address the bases for EPA's adverse rating and recommendations provided in our formal comment letter on the DEIS prepared for the South Mountain Freeway (July 23, 2013). The comments provided below provide recommendations for the PM10 Hot Spot Modeling Protocol only, and we note that there are remaining, substantive issues as outlined in the DEIS comment letter that we would like to discuss with FHWA and ADOT once a strategy for addressing the remaining issues has been prepared.

Overall Comment
Based on EPA's review of the South Mountain PM10 hot-spot protocol, we have concerns that the protocol and many of the criteria referenced in the protocol are not consistent with the transportation conformity rule. The document contains many references to decisions made through interagency consultation; however, EPA was not included in this consultation. EPA must also be consulted for evaluating and choosing a model and associated methods and assumptions to be used in hot-spot analysis under 40 CFR 93.105(c)(1)(i). By including EPA earlier, concerns about the "screening process" and the modeling proposed for projects can be resolved earlier in the project timeline. See Section 2.3 of our quantitative hot-spot guidance for more information on interagency consultation requirements for these analyses.

ADOT Checklist for Project Level Conformity
Page 1: The last paragraph mentions the "ADOT Checklist for Project Level Conformity – Particulate Matter Nonattainment Area Screening Process."

> *Comment:* Please provide a copy of this checklist so that we can determine if the checklist's decision criteria are consistent with EPA's conformity rule, preamble and our quantitative hot-spot guidance. Based on our review of the South Mountain PM10 hot-spot protocol, we have concerns that the checklist may not be consistent with the conformity rule. For example, the title of the checklist mentions PM nonattainment areas, but hot-spot analyses also apply in PM maintenance areas.

Determining Whether the Project Needs an Analysis
Page 2: The protocol indicates two questions to consider in determining whether the project must have a hot-spot analysis:

1. Are the build volumes ≥ 125,000 AADT and truck volumes ≥ 10,000? and
2. Does the project cause an increase in AADT ≥ 6,250, and an increase in truck volumes ≥ 500 trucks?
The protocol states that if the answer is yes to these questions, it is potentially a project of air quality concern, and if the answer is no to both, it is not.

> *Comment:* While EPA agrees this project should have a hot-spot analysis, there are no specific AADT or truck volume thresholds that alone determine whether or not a project must have a hot-spot analysis. Are these decision criteria included in the ADOT checklist? The questions listed under "Other Considerations" are also important in making this decision, even if the answer is no to these first two questions. For example, under "Other Considerations," the protocol asks if the project affects locations identified in the SIP. If the answer is yes, then a hot-spot analysis is required based on the regulation at 40 CFR 93.123(b)(1)(v), regardless of the traffic volumes on the project.

While the decision criteria listed in questions #1 and #2 are levels found in the conformity rule preamble and Appendix B of EPA's quantitative PM hot-spot guidance[1], the levels are only intended as an example rather than a specific threshold. Regular interagency consultation, including EPA, FHWA, ADOT, ADEQ and MAG should be used to determine if a project is of air quality concern and requires a PM hot-spot analysis.

Other Considerations for Determining Whether the Project Needs an Analysis

Page 2: The protocol states, "Other Considerations: 1. Does the project affect intersections that are of Level-of-Service (LOS) D, E, or F with a significant number of diesel vehicles? Yes"

> *Comment:* It is unclear to EPA why the answer to this question is yes, as this is a freeway project. The modeling protocol does not address intersections, and it would need to if this answer is yes. See similar comments below regarding "Determining the Project to be Modeled."

Page 2: The protocol states, "2. Does the project affect locations, areas or categories of sites that are identified in the …[SIP] as sites of violation or potential violation? Yes – PM10"

> *Comment:* EPA does not agree that there are specific locations, areas or categories of sites that are identified in the PM10 SIP as sites of violation that should be considered as potential hot-spots. Therefore the answer to this question should be no. To clarify, this criterion isn't automatically determined to be a yes if the SIP shows there is air quality worse than the NAAQS in the entire nonattainment area.

Defining the Project Area
Page 3, 2a: "The project area encompasses more than 156 square miles. The project area includes the alternative alignments."
Page 4, 2b: "Roadway configurations will be based on available information, comparable freeway designs such as the San Tan Freeway, and will be consistent among the alternatives."

> *Comment :* The protocol and hot-spot analysis need to be more specific about what the project area is. It is unclear how the project area will encompass more than 156 square miles. Since the protocol states that only the Preferred Alternative will be modeled, why does the protocol mention that roadway configurations for the other alternatives will be consistent and included?

[1] The complete name of this guidance is "Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas," EPA-420-B-13-053, November 2013, found on the web at: http://www.epa.gov/otaq/stateresources/transconf/projectlevel-hotspot.htm.

Section 3.3.2 of EPA's quantitative PM hot-spot guidance states, "…it is necessary to define the project, determine where it is to be located, and ascertain what other emission sources are located in the project area." It is reasonable to model one alternative, but an analysis for the preferred alternative would not serve as the analysis for any other alternative alignment. Therefore, if an alternative alignment other than the preferred is chosen, another analysis would need to be conducted.

Defining the Project to be Modeled
Page 3, 2a: "The three highest volume interchanges along the Preferred Alternative will be modeled."
Page 4, 2b: "… the three worst-case interchanges and locations expected to have the highest concentrations under the Build Alternative will be selected in consultation with FHWA for detailed dispersion modeling with CAL3QHCR."

> *Comment:* The protocol and hot-spot analysis need to be more specific about what will be modeled and EPA requests to also be consulted on the selection of the three worst-case interchanges, consistent with the conformity rule's consultation requirements at 40 CFR 93.105(c)(1)(i).
>
> The protocol and/or the analysis should refer to Section 3.3.2 of EPA's quantitative PM hot-spot guidance to validate the approach of modeling the three highest volume interchanges, as this section states: "For large projects, it may be necessary to analyze multiple locations that are expected to have the highest air quality concentrations and, consequently, the most likely new or worsened PM NAAQS violations. If conformity is demonstrated at such locations, then it can be assumed that conformity is met in the entire project area."
>
> Please clarify how the effects of the project on nearby links would be considered in the modeling, if just the links for the worst interchanges are modeled. EPA's quantitative PM hot-spot guidance states, "The air quality modeling for nearby sources that would be affected by the project must include any reasonable expected changes in operation of the nearby source between the build and no-build scenarios when both scenarios are necessary to demonstrate conformity."

Analysis Years
Page 3, 2b: The protocol says "emission rates in 2015, 2025, and 2035 will be estimated using EPA's MOVES2010b program." It also says "Based on the most recent MAG Conformity Analysis, the peak year of emissions will be determined and used to quantify PM10 emissions associated with the project."

> *Comment:* It is not clear from the protocol whether all three of the years mentioned will be analyzed, or if only one of them will be chosen. There is no explanation in the protocol of why these three years are the *only* ones being considered as the year or years of peak emissions. EPA's conformity regulations and hot-spot guidance do not indicate that the year of peak emissions could be chosen based on the area's regional conformity analysis.
>
> The protocol needs to be clear about what year or years are being analyzed, as well as why the chosen analysis year or years are expected to be years in which peak emissions will occur. Section 2.8 of EPA's quantitative PM hot-spot guidance states: "Areas should analyze the year(s) within the transportation plan… during which peak emissions from the project are expected; and a new NAAQS violation or worsening of an existing violation would most likely occur due to the cumulative impacts of the project and background concentration in the project area." Section 3.10 states that the documentation of the analysis should include "a description of the analysis year(s) examined and the factors considered in determining the year(s) of peak emissions."

The protocol does not mention when the project will be open to traffic. Will the project be opened in 2015, or would this be a construction year? The next year mentioned by the protocol is 2025. However, if the project is opened to traffic several years before 2025, then 2025 may not be the year of peak emissions. The peak may occur before 2025 or may occur during a year of construction. Please provide more rationale on what year the peak emissions could be occurring and consult with EPA on that determination.

CAL3QHCR Version

Page 4, 2b: "… the three worst-case interchanges and locations expected to have the highest concentrations under the Build Alternative will be selected in consultation with FHWA for detailed dispersion modeling with CAL3QHCR."

Comment: What version of CAL3QHCR will be used? Please see EPA's website at http://www.epa.gov/ttn/scram/dispersion_prefrec.htm#cal3qhc for the currently approved version of the model.

Background Concentrations

Page 5, 2d: "PM10 background concentrations will be determined in consultation with MAG, ADOT, and FHWA…"

Comment 1: Background concentrations must be chosen through the process established by the area's interagency consultation procedures (40 CFR 93.105(c)(1)(i)). EPA must also be consulted on the selection of background concentrations for this project under 40 CFR 93.105(c)(1)(i). Based on our review, we have concerns regarding the protocol's discussion about background concentrations. Our overall recommendation is that a nearby monitor be used to determine a representative background concentration for hot spot monitoring.

In Section 8.3.1 of the guidance, EPA discusses factors for "Using a Single Monitor" in a PM hot-spot analysis, e.g., "Background concentrations data should be as representative as possible for the project area examined by the PM hot-spot analysis. In most cases, the simplest approach will be to use data from the monitor closest to and upwind of the project area." EPA's guidance further discusses considerations for choosing a monitor on which to base background concentrations, including whether there are similar characteristics between the monitor location and the project area (the density and mix of emission sources around the monitor location, how well the monitor captures the influence of nearby sources not affected by the project, land use and terrain, height of the monitor probe, purpose and geographic scale of the monitor), distance of the monitor from the project area, and wind patterns between the monitor and the project area.

Page 7, 6: "To obtain representative background concentrations, data from a monitoring station in the region that is not impacted by local sources should be used."

Comment 2: It is unclear what is meant by "local sources," but this statement is of concern. Section 8.3 of EPA's quantitative PM hot-spot guidance states, "PM hot-spot analyses should also include background concentrations from "other sources" as well as any nearby sources that are not included in modeling." The guidance defines "nearby sources" as those which would be reflected in the background concentrations unless affected by the project, in which case they would be modeled, and "other sources" as those in the project area not from the project or any nearby sources.

Page 7, 6: The protocol states that if EPA takes action on the 5% plan before the release of the FEIS, the MAG background value will be used, and that this approach was agreed to under interagency consultation.

The protocol also states that the background values used in the plan "were based on data collected at a remote location approximately 30 miles west of the boundary of the project area."

Comment 3: It is not clear that the background concentrations calculated for SIP modeling, which reflects air quality without the influence of any sources in the nonattainment area, would adequately represent background concentrations at the project area. We do not agree that data 30 miles west of the boundary of the project area would be representative of the project area and meet the criteria described in EPA's quantitative PM hot-spot guidance. We were not included in the interagency consultation on this issue, as is required. We are not aware of any data in the 5% plan that would be adequate for use for hot spot background data for this analysis.

Page 7, 6: The protocol states "The MAG 2012 Five Percent Plan (Plan) demonstrates attainment of the 24-hour PM10 standard for three areas, including portions of the project area."

Comment 4: Please explain how this is relevant to the hot-spot analysis? Are you suggesting that the modeling for the 5% plan could provide background concentrations rather than AQ monitoring data?

Construction Dust

Page 6, 4b: The protocol indicates that through interagency consultation, it has been decided that construction dust does not need to be modeled.

Comment: Please provide more background on the construction period of this project? Is it 5 years or less? EPA consultation must be included in this protocol for such decisions (40 CFR 93.105(c)(1)(i)), therefore this issue should be re-examined. If the construction period will be greater than five years, construction-related emissions must be included in the hot-spot analysis.

Meteorological Data

Comment 1: This is another part of the analysis where interagency consultation that includes ADEQ and EPA should be used to ensure that meteorological data is selected that is representative of the project location and appropriate for use with the selected air quality model. EPA requests additional information for why the Phoenix Sky Harbor Airport meteorological station is considered representative of the project area for the proposed project based on the factors described in Section 7.5.1. of EPA's quantitative hot-spot guidance. We also request additional information on how selected meteorological data is proposed to be used for emissions and air quality modeling, as described below.

Page 5, 2e: "Meteorological inputs to MOVES will be based on data from the Phoenix Sky Harbor Airport (surface) and Tucson International Airport (upper air) and be consistent with MAG inputs to MOVES.

Comment 2: For MOVES, temperature and humidity data will be needed; MOVES does not need upper air data, but this data will be needed for air quality modeling. Please confirm specifically how the temperature/humidity data for the hot-spot analysis are consistent with those used for the area's regional emissions analysis (40 CFR 93.123(c)(3)).

Page 6, 5a: The protocol states, "Five years of surface meteorological data (2008-2012) … will be provided by ADOT and used with CAL3QHCR."

Comment 3: Please provide additional information regarding the proposed method for pre-processing the meteorological data for these years for use with CAL3QHCR. Please note that our guidance does not include a technically supported method for using AERMET pre-processed data with CAL3QHCR.

Receptor Locations
Page 6, 5c: The protocol includes the statement, "Wind distribution patterns will be reviewed to assist in the selection of receptor location impacted during stable atmospheric conditions; additional receptors will be placed downwind of the modeled roadway."

Comment: Section 7.6 of EPA's quantitative PM hot-spot guidance provides general guidance that should be followed when placing receptors. Receptors need to be placed around the entire project being modeled. Interagency consultation must be used, including EPA, to determine the placement of receptors.

No-build Assumptions
Page 8, 7b: "If the build design value is over the NAAQS, the No-build scenario will also be evaluated and compared to the build scenario."

Comment: The protocol does not describe the process that will be used to evaluate the no-build scenario. The build and no-build analysis should not have the same assumptions about population and trip making in the project area. New socioeconomic projections will be needed to reflect future conditions without the project being built. Please see comments in the EPA letter on the projects DEIS in regard to this point. MAG's sub-regional socioeconomic forecasting model, UrbanSim, has been used for similar "what if scenarios" in past applications in other locations (e.g., Salt Lake City). Consultation with EPA will be necessary when defining the no-build scenario.

EPA appreciates the opportunity to review the protocol and we are available to discuss all comments and recommendations provided. If you have any questions, please contact Karina O'Connor at (775) 434-8176;oconnor.karina@epa.gov, or Clifton Meek, the lead reviewer for the DEIS, at (415) 972-3370; meek.clifton@epa.gov. Please also contact Clifton Meek to schedule an interagency meeting to discuss the entirety of the recommendations provided from EPA to FHWA following our review of the South Mountain DEIS.

Sincerely,

Connell Dunning
Transportation Team Supervisor
Environmental Review Office

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
U.S. Courthouse – Federal Building
230 N. First Avenue, Suite 509
Phoenix, Arizona 85003-1733
(602) 280-8801

JAN 31 2014

Audrey Unger
HDR Engineering
3200 East Camelback Road, Suite 350
Phoenix, Arizona 85018

RE: Updated NRCS-CPA-106 FPPA Farmland Conversion Impact Rating
South Mountain Freeway

Dear Audrey Unger:

The Natural Resources Conservation Service (NRCS) has general responsibility, nationwide, for implementing the Farmland Protection Policy Act (FPPA) and reviewing projects that may affect prime and unique important farmland and/or wetlands associated with agriculture. This is an update to the NRCS-CPA-106 form for the South Mountain Freeway.

After reviewing information you provided, the following is noted:

1. The proposed project is subject to the FPPA because they are funded by a Federal agency or program (United States Code 4201 and 7 Code of Federal Regulations 658).

2. Analysis of 2013 NAIP Imagery for Arizona, along with the updated prime and unique farmland designation, reveals that the proposed project area has been changed since the previous evaluation.

Because this area is prime and unique farmland, we have modified the original NRCS-CPA-106 form (Farmland Conversion Impact Rating for Corridor Type Projects), which includes alternative corridors for the South Mountain Transportation Corridor (W59, W71, W101WFR, W101CPR, W101EPR, W101WPR, W101CFR, E1, W101EFR). Please select your preferred alternative by completing and returning the enclosed NRCS-CPA-106 form at your earliest convenience.

Should you have any questions, please contact Andrew Burnes, GIS Specialist, at 602-280-8840, or via email at andrew.burnes@az.usda.gov. Thank you for the opportunity to review the proposed project.

Sincerely,

KEISHA L. TATEM
State Conservationist

Enclosure

Helping People Help the Land

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U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*

3. Date of Land Evaluation Request: 11/18/13
4. Sheet 1 of 3
1. Name of Project: South Mountain Transportation Corridor
5. Federal Agency Involved: Federal Highway Administration
2. Type of Project: EIS/LDCR
6. County and State: Maricopa County, Arizona

PART II *(To be completed by NRCS)*

1. Date Request Received by NRCS: 11/18/13
2. Person Completing Form: Andrew Burnes
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form.) YES ☑ NO ☐
4. Acres Irrigated: 267,295 | Average Farm Size: 302
5. Major Crop(s): alfalfa, cotton, grains
6. Farmable Land in Government Jurisdiction: Acres: 267,295 % 3.2
7. Amount of Farmland As Defined in FPPA: Acres: 190,182 % 3.2
8. Name Of Land Evaluation System Used: N/A
9. Name of Local Site Assessment System: N/A
10. Date Land Evaluation Returned by NRCS:

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment - Western Section			
	W59	W71	W101WFR	W101CPR
A. Total Acres To Be Converted Directly	588	501	779	746
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	588	501	779	746
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	588	501	779	746
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	24	25	25	23
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	85	87	87	81
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area in Nonurban Use — 15	10	9	10	9
2. Perimeter in Nonurban Use — 10	7	7	7	6
3. Percent Of Corridor Being Farmed — 20	12	12	12	11
4. Protection Provided By State And Local Government — 20	0	0	0	0
5. Size of Present Farm Unit Compared To Average — 10	5	5	5	5
6. Creation Of Nonfarmable Farmland — 25	10	10	10	10
7. Availablility Of Farm Support Services — 5	3	3	3	3
8. On-Farm Investments — 20	15	15	15	15
9. Effects Of Conversion On Farm Support Services — 25	8	8	8	8
10. Compatibility With Existing Agricultural Use — 10	4	4	4	4
TOTAL CORRIDOR ASSESSMENT POINTS — 160	74	73	74	71
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100	85	87	87	81
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	74	73	74	71
TOTAL POINTS *(Total of above 2 lines)* — 260	159	160	161	152

1. Corridor Selected:
2. Total Acres of Farmlands to be Converted by Project:
3. Date Of Selection:
4. Was A Local Site Assessment Used? YES ☐ NO ☐
5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*

3. Date of Land Evaluation Request: 11/18/13
4. Sheet 2 of 3
1. Name of Project: South Mountain Transportation Corridor
5. Federal Agency Involved: Federal Highway Administration
2. Type of Project: EIS/LDCR
6. County and State: Maricopa County, Arizona

PART II *(To be completed by NRCS)*

1. Date Request Received by NRCS: 11/18/13
2. Person Completing Form: Andrew Burnes
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form.) YES ☑ NO ☐
4. Acres Irrigated: 267,295 | Average Farm Size: 302
5. Major Crop(s): alfalfa, cotton, grains
6. Farmable Land in Government Jurisdiction: Acres: 267,295 % 3.2
7. Amount of Farmland As Defined in FPPA: Acres: 190,182 % 3.2
8. Name Of Land Evaluation System Used: N/A
9. Name of Local Site Assessment System: N/A
10. Date Land Evaluation Returned by NRCS:

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment - Western Section			
	W101EPR	W101WPR		W101CFR
A. Total Acres To Be Converted Directly	744	788		737
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	744	788		737
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	744	788		737
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	21	23		25
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	88	85		85
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area in Nonurban Use — 15	9	10		9
2. Perimeter in Nonurban Use — 10	6	7		7
3. Percent Of Corridor Being Farmed — 20	11	12		12
4. Protection Provided By State And Local Government — 20	0	0		0
5. Size of Present Farm Unit Compared To Average — 10	5	5		5
6. Creation Of Nonfarmable Farmland — 25	10	10		10
7. Availablility Of Farm Support Services — 5	3	3		3
8. On-Farm Investments — 20	15	15		15
9. Effects Of Conversion On Farm Support Services — 25	8	8		8
10. Compatibility With Existing Agricultural Use — 10	4	4		4
TOTAL CORRIDOR ASSESSMENT POINTS — 160	71	74		73
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100	88	85		85
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	71	74		73
TOTAL POINTS *(Total of above 2 lines)* — 260	159	159		158

1. Corridor Selected:
2. Total Acres of Farmlands to be Converted by Project:
~~3. Date Of Selection:~~
~~4. Was A Local Site Assessment Used?~~ ~~YES~~ ☐ ~~NO~~ ☐
5. Reason For Selection:

Signature of ~~Person Completing this Part:~~ | ~~DATE~~

~~NOTE: Complete~~ a form for each segment with more than one Alternate Corridor

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request	4. Sheet 3 of 3
1. Name of Project: **South Mountain Transportation Corridor**	5. Federal Agency Involved: **Federal Highway Administration**	
2. Type of Project: **EIS**	6. County and State: **Maricopa County, Arizona**	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS: **11/18/13**	2. Person Completing Form: **Andrew Burnes**
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form.) YES ☑ NO ☐		4. Acres Irrigated: **267,295** / Average Farm Size: **302**
5. Major Crop(s): **alfalfa, cotton, grains**	6. Farmable Land in Government Jurisdiction — Acres: **267,295** % **3.2**	7. Amount of Farmland As Defined in FPPA — Acres: **190,182** % **3.2**
8. Name Of Land Evaluation System Used: **N/A**	9. Name of Local Site Assessment System: **N/A**	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Western & Eastern Sections			
	W101EFR	**E1**		
A. Total Acres To Be Converted Directly	**735**	**135**		
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	**735**	**135**		
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	**735**	**135**		
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	**22**	**22**		
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	88	88		
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area in Nonurban Use — 15	**9**	**6**		
2. Perimeter in Nonurban Use — 10	**6**	**5**		
3. Percent Of Corridor Being Farmed — 20	**12**	**0**		
4. Protection Provided By State And Local Government — 20	**0**	**0**		
5. Size of Present Farm Unit Compared To Average — 10	**5**	**0**		
6. Creation Of Nonfarmable Farmland — 25	**10**	**0**		
7. Availablility Of Farm Support Services — 5	**3**	**0**		
8. On-Farm Investments — 20	**15**	**0**		
9. Effects Of Conversion On Farm Support Services — 25	**8**	**0**		
10. Compatibility With Existing Agricultural Use — 10	**4**	**4**		
TOTAL CORRIDOR ASSESSMENT POINTS — 160	**72**	**15**		
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100	88	88		
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	**72**	**15**		
TOTAL POINTS *(Total of above 2 lines)* — 260	160	103		

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

NRCS-CPA-106 *(Reverse)*

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

ADOT

Environmental Services

Janice K. Brewer, Governor
John S. Halikowski, Director
John H. Nichols, Deputy Director

May 13, 2014

Dr. Joyce Francis
Habitat Branch Chief
Arizona Game and Fish Department
5000 West Carefree Highway
Phoenix, Arizona 85086-5000

Subject: Transmittal of Courtesy Copy of Biological Evaluation for South Mountain Transportation Corridor; ADOT Project No. 202L MA 054 H5764 01L; Federal-aid Project No. NH-202-D(ADY)

Dear Dr. Francis:

The Federal Highway Administration (FHWA), as the lead federal agency, in conjunction with the Arizona Department of Transportation (ADOT), as the project sponsoring agency, propose to build an approximately 22-mile long freeway, on new alignment, connecting Interstate 10 (I-10) (Maricopa Freeway) south of Phoenix with I-10 (Papago Freeway) west of Phoenix, following an east-to-west alignment along Pecos Road through the western tip of the South Mountains, then north to I-10 between 57th and 63rd avenues. The project is located within the City of Phoenix and the communities of the Estrella Village, Laveen Village, and Ahwatukee Foothills Village in Maricopa County. The project would consist of an eight-lane facility (four in each direction of traffic), would span the 100-year floodplain of the Salt River with bridges, and would pass through the west end of the South Mountains including a small portion of South Mountain Park and Preserve.

The enclosed Biological Evaluation (BE) describes the proposed project and addresses the current Maricopa County list of threatened, endangered, and candidate species and the bald eagle in reference to the Bald and Golden Eagle Protection Act. The Arizona Species of Greatest Conservation Need were also assessed in Table A-1 in the appendix. The species listed below were evaluated in detail due to known occurrences and presence of suitable habitat within or near the project area:

Yuma clapper rail	*Rallus longirostris yumanensis*	Endangered
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Proposed Threatened
Bald eagle	*Haliaeetus leucocephalus*	Bald and Golden Eagle Protection Act
Sonoran desert tortoise	*Gopherus morafkai*	Candidate
Tucson shovel-nosed snake	*Chionactis occipitalis klauberi*	Candidate

Based on the analyses presented in the BE, FHWA has determined that the proposed project would have no effect on the Yuma clapper rail and no effect on the Western yellow-billed cuckoo. FHWA has also determined that the proposed project will not result in "take" under the Bald and Golden Eagle Protection Act. FHWA has concluded that the proposed project may impact individual Sonoran desert tortoises and individual Tucson shovel-nosed snakes, both Candidate species under the Endangered Species Act.

At this time, FHWA is transmitting the BE to the Gila River Indian Community for review and to the US Fish and Wildlife Service to request technical assistance regarding minimizing impacts to the Sonoran desert tortoise and the Tucson shovel-nosed snake as well as review of the "no effect" determinations for the Yuma clapper rail and Western yellow-billed cuckoo and the "no take" finding for the Bald eagle.

ADOT is transmitting this copy of the BE to Arizona Game and Fish Department (AGFD) to provide information related to questions raised in the comments provided by AGFD on the Draft Environmental Impact Statement for the South Mountain Freeway. I would like to thank both Kelly Wolff-Krauter and Scott Sprague for discussing the project and general concerns as the BE was developed. ADOT is looking forward to further participation and input from AGFD personnel in the final project design process if the decision is made to move forward. Please contact me either by phone (602-292-0301) or e-mail (kgade@azdot.gov) if you have questions or concerns regarding the South Mountain Freeway project or coordination with ADOT in general. I would also be happy to provide a paper copy of the BE upon request.

Sincerely,

Kris Gade
Roadside Resources Specialist
ADOT Environmental Services
1611 W. Jackson St, MD EM04
Phoenix, AZ 85007

Enclosure

cc with enclosure (via email):
Kelly Wolff-Krauter, AGFD
Cristina Jones, AGFD
Scott Sprague, AGFD
Ray Schweinsburg, AGFD

cc (via email):
Steve Spangle, USFWS
Rebecca Yedlin, FHWA

U.S. Department of Transportation
Federal Highway Administration

ARIZONA DIVISION

4000 North Central Avenue
Suite 1500
Phoenix, Arizona 85012-3500
Phone: (602) 379-3646
Fax: (602) 382-8998
http://www.fhwa.dot.gov/azdiv/index.htm

May 14, 2014

In Reply Refer To:
202-D(ADY)
HOP-AZ

202-D(ADY)
202L MA 054 H5764 01L
South Mountain Transportation Corridor
USFWS File Number AESO/SE 2-21-02-I-005
Request for Technical Assistance

Mr. Steve Spangle, Field Supervisor
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951

Dear Mr. Spangle:

The Federal Highway Administration (FHWA), as the lead federal agency, in conjunction with the Arizona Department of Transportation (ADOT), as the project sponsoring agency, propose to build an approximately 22-mile long freeway, on new alignment, connecting Interstate 10 (I-10) (Maricopa Freeway) south of Phoenix with I-10 (Papago Freeway) west of Phoenix, following an east-to-west alignment along Pecos Road through the western tip of the South Mountains, then north to I-10 between 57th and 63rd avenues. The project is located within the City of Phoenix and the communities of the Estrella Village, Laveen Village, and Ahwatukee Foothills Village in Maricopa County. The project would consist of an eight-lane facility (four in each direction of traffic), would span the 100-year floodplain of the Salt River with bridges, and would pass through the west end of the South Mountains including a small portion of South Mountain Park and Preserve.

The enclosed Biological Evaluation (BE) describes the proposed project and addresses the current Maricopa County list of threatened, endangered, and candidate species and the bald eagle in reference to the Bald and Golden Eagle Protection Act. The species listed below were evaluated in detail due to known occurrences and presence of suitable habitat within or near the project area:

Yuma clapper rail	*Rallus longirostris yumanensis*	Endangered
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Proposed Threatened
Bald eagle	*Haliaeetus leucocephalus*	Bald and Golden Eagle Protection Act
Sonoran desert tortoise	*Gopherus morafkai*	Candidate
Tucson shovel-nosed snake	*Chionactis occipitalis klauberi*	Candidate

Based on the analyses presented in the BE, FHWA has determined that the proposed project would have no effect on the Yuma clapper rail and no effect on the Western yellow-billed cuckoo. FHWA has also determined that the proposed project will not result in "take" under the Bald and Golden Eagle Protection Act. FHWA has concluded that the proposed project may impact individual Sonoran desert tortoises and individual Tucson shovel-nosed snakes, both Candidate species under the Endangered Species Act.

At this time, FHWA is requesting technical assistance with minimizing impacts to the Sonoran desert tortoise and the Tucson shovel-nosed snake as well as review of the "no effect" determinations for the Yuma clapper rail and Western yellow-billed cuckoo and the "no take" finding for the Bald eagle. A response is requested by June 16, 2014; any comments will be included in the Final Environmental Impact Statement for the project. If there are any questions or concerns, please contact Rebecca Yedlin, FHWA Environmental Coordinator at (602) 382-8979 or e-mail at rebecca.yedlin@dot.gov, or Kris Gade, ADOT Roadside Resources Specialist at (602) 292-0301 or e-mail at kgade@azdot.gov. Thank you for your assistance.

Sincerely,

for Karla S. Petty
Division Administrator

Enclosure

cc:
Mr. Gregory Mendoza, Governor, Gila River Indian Community, P.O. Box 97, Sacaton, AZ 85147
Mr. Charles Enos, Department of Environmental Quality, Gila River Indian Community, P.O. Box 97, Sacaton, AZ 85147

U.S. Department of Transportation
Federal Highway Administration

ARIZONA DIVISION

4000 North Central Avenue
Suite 1500
Phoenix, Arizona 85012-3500
Phone: (602) 379-3646
Fax: (602) 382-8998
http://www.fhwa.dot.gov/azdiv/index.htm

May 14, 2014

In Reply Refer To:
NH-202-D(ADY)
HOP-AZ

NH-202-D(ADY)
202L MA 054 H5764 01L
South Mountain Transportation Corridor
Transmittal of Biological Evaluation

Mr. Charles Enos
Department of Water Quality
Gila River Indian Community
Post Office Box 97
Sacaton, Arizona 85147

Dear Mr. Enos:

The Federal Highway Administration (FHWA), as the lead federal agency, in conjunction with the Arizona Department of Transportation (ADOT), as the project sponsoring agency, propose to build an approximately 22-mile long freeway, on new alignment, connecting Interstate 10 (I-10) (Maricopa Freeway) south of Phoenix with I-10 (Papago Freeway) west of Phoenix, following an east-to-west alignment along Pecos Road through the western tip of the South Mountains, then north to I-10 between 57th and 63rd avenues. The project is located within the City of Phoenix and the communities of the Estrella Village, Laveen Village, and Ahwatukee Foothills Village in Maricopa County. The project would consist of an eight-lane facility (four in each direction of traffic), would span the 100-year floodplain of the Salt River with bridges, and would pass through the west end of the South Mountains including a small portion of South Mountain Park and Preserve.

The enclosed Biological Evaluation (BE) describes the proposed project and addresses the current Maricopa County list of threatened, endangered, and candidate species and the bald eagle in reference to the Bald and Golden Eagle Protection Act. The species listed below were evaluated in detail due to known occurrences and presence of suitable habitat within or near the project area:

Yuma clapper rail	*Rallus longirostris yumanensis*	Endangered
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Proposed Threatened
Bald eagle	*Haliaeetus leucocephalus*	Bald and Golden Eagle Protection Act
Sonoran desert tortoise	*Gopherus morafkai*	Candidate
Tucson shovel-nosed snake	*Chionactis occipitalis klauberi*	Candidate

Based on the analyses presented in the BE, FHWA has determined that the proposed project would have no effect on the Yuma clapper rail and no effect on the Western yellow-billed cuckoo. FHWA has also determined that the proposed project will not result in "take" under the Bald and Golden Eagle Protection Act. FHWA has concluded that the proposed project may impact individual Sonoran desert tortoises and individual Tucson shovel-nosed snakes, both Candidate species under the Endangered Species Act.

FHWA is providing the BE for review by the Gila River Indian Community and respectfully requests that comments on the document be provided by June 16, 2014. The BE is also being submitted to the United Fish and Wildlife Service with a request for technical assistance with minimizing impacts to the Sonoran desert tortoise and the Tucson shovel-nosed snake as well as review of the "no effect" determinations for the Yuma clapper rail and Western yellow-billed cuckoo and the "no take" finding for the Bald eagle. Comments received on the BE will be included in the Final Environmental Impact Statement for the project. If there are any questions or concerns, please contact Rebecca Yedlin, FHWA Environmental Coordinator at (602) 382-8979 or rebecca.yedlin@dot.gov, or Kris Gade, ADOT Roadside Resources Specialist at (602) 292-0301 or kgade@azdot.gov. Thank you for your cooperation.

Sincerely,

for Karla S. Petty
Division Administrator

Enclosure

cc:
Mr. Gregory Mendoza, Governor, Gila River Indian Community, P.O. Box 97, Sacaton, AZ 85147

Gregory Mendoza
Governor

JUN 2 - 2014

Stephen Roe Lewis
Lieutenant Governor

GILA RIVER INDIAN COMMUNITY
Executive Office
"A New Generation of Leadership Serving the People"

May 30, 2014

Karla S. Petty, Arizona Division Administrator, FHWA
4000 North Central Avenue
Suite 1500
Phoenix, AZ 85012-3500

Re: Request for Comment Period Extension - South Mountain Transportation Corridor Biological Evaluation (HN-202-D(ADY))

Dear Ms. Petty,

The Gila River Indian Community (the Community) has received your May 14, 2014 letter and Biological Evaluation (BE) concerning the South Mountain Transportation Corridor project (Project). You have requested that the Community provide comments on the BE by June 16, 2014. As a stakeholder with a significant interest in the Project, the Community appreciates the opportunity to review and comment on the BE, and intends to do so. In order to allow the Community to properly review and prepare adequate comments, the Community requests an extension of the comment period until August 15, 2014.

The BE is a comprehensive, voluminous (close to 100 pages) and highly technical report that addresses the Project's potential impacts to threatened and endangered species in addition to culturally significant plant and animal life, which are issues of great importance to the Community. Preparing BE comments will require technical and legal reviews of the BE by the Community's Department of Environmental Quality, Cultural Resource Management Program, and Office of General Counsel. Once prepared, comments must be approved by the Tribal Council's Natural Resources Standing Committee (NRSC), the Cultural Resources Standing Committee, and the Government and Management Resources Standing Committee and the Tribal Council itself. The Community requires an extension of the comment deadline, to August 15, 2014, in order to allow for adequate time to review the BE, prepare comments, and secure the required Standing Committees and Tribal Council approvals.

Please respond to me at your earliest convenience regarding this comment period extension request. Thank you for the opportunity to review and comment on the BE.

Sincerely,

Gregory Mendoza, Governor
Gila River Indian Community

525 West Gu u Ki • Post Office Box 97 • Sacaton, Arizona 85147 • Telephone: (520) 562-9841 • Fax Line: (520) 562-9849
web: www.gilariver.org

U.S. Department of Transportation
Federal Highway Administration

ARIZONA DIVISION

4000 North Central Avenue
Suite 1500
Phoenix, Arizona 85012-3500
Phone: (602) 379-3646
Fax: (602) 382-8998
http://www.fhwa.dot.gov/azdiv/index.htm

June 3, 2014

In Reply Refer To:
202-D(ADY)
HOP-AZ

202-D(ADY)
202L MA 054 H5764 01L
South Mountain Transportation Corridor
Timeframe for Review of Biological Evaluation

Mr. Gregory Mendoza, Governor
Gila River Indian Community Executive Office
525 West Gu u Ki
P.O. Box 97
Sacaton, Arizona 85147

Dear Governor Mendoza:

The Federal Highway Administration (FHWA) has received the Gila River Indian Community's (the Community) request dated May 30, 2014, for a time extension to complete review of the Biological Evaluation prepared for the proposed South Mountain Transportation Corridor Project. FHWA requested comments by June 16, 2014 in the transmittal of the report. Your letter requests a review extension to August 15, 2014 in order to complete the technical and legal reviews of the document and to receive the approvals required by the Community.

We understand and appreciate the complexity of the Community's review and approval process. However, the standard time for review and comment provided to the Community and to other consulting parties is 30 days. In light of your internal process, FHWA will double the standard time period to 60 days and request to receive comments from the Community no later than July 15, 2014.

We appreciate the involvement of the Community with this project and look forward to continuing our partnership. If there are any questions or concerns, please contact Rebecca Yedlin, FHWA Environmental Coordinator, at (602) 382-8979. Please submit your comments by mail to Rebecca Yedlin, 4000 N. Central Ave., Suite 1500, Phoenix, AZ 85012; or by email to Rebecca.Yedlin@dot.gov. Thank you for your assistance.

Sincerely,

Karla S. Petty
Division Administrator

cc:
Mr. Charles Enos, Department of Environmental Quality, Gila River Indian Community, P.O. Box 97, Sacaton, AZ 85147

U.S. Department of Transportation
Federal Highway Administration

ARIZONA DIVISION

4000 North Central Avenue
Suite 1500
Phoenix, Arizona 85012-3500
Phone: (602) 379-3646
Fax: (602) 382-8998
http://www.fhwa.dot.gov/azdiv/index.htm

June 2, 2014

In Reply Refer To:
NH-202-D(ADY)
HOP-AZ

NH-202-D(ADY)
TRACS No. 202L MA 054 H5764 01L
South Mountain Freeway (Loop 202)
Air Quality Technical Report

Mr. Jared Blumenfeld
U.S. Environmental Protection Agency
Office of the Regional Administration
Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

Dear Mr. Blumenfeld:

The Arizona Department of Transportation and the Federal Highway Administration (FHWA) have completed the updated air quality analyses for the proposed South Mountain Freeway (Loop 202), Interstate 10 (Papago Freeway) to Interstate 10 (Maricopa Freeway), for inclusion in the Final Environmental Impact Statement (FEIS). These analyses, documented in the enclosed Air Quality Technical Report, address some of the U.S. Environmental Protection Agency's major comments on the Draft Environmental Impact Statement (DEIS) dated July 23, 2013. The updated analyses are described in the following paragraphs.

The Maricopa Association of Governments adopted new socioeconomic projections in July 2013. Those revised projections were used to develop new traffic projections for the proposed freeway, which were, in turn, used to update the air quality analyses. In addition, the qualitative particulate matter (PM_{10}) hot-spot analysis performed in the DEIS was updated to a quantitative PM_{10} analysis to ensure that a state-of-the-art analysis was completed for the proposed action. Also, the quantitative mobile source air toxics (MSATs) inventory analysis and the carbon monoxide (CO) evaluation presented in the DEIS were updated to reflect the U.S. Environmental Protection Agency's updates in modeling methodology.

Based on the PM_{10} and CO analyses conducted for the Recommended Alternative, it has been determined that the proposed action would not cause an exceedance of the PM_{10} or CO National Ambient Air Quality Standards. The project would comply with transportation conformity regulations at 40 Code of Federal Regulations Part 93 and with conformity provisions of Section 176(c) of the Clean Air Act.

The proposed action is included in the Maricopa Association of Governments *Regional Transportation Plan* for 2035, which was found to conform to the State's air quality implementation plan by FHWA on February 12, 2014. It is also included in the Fiscal Year 2014–2018 Transportation Improvement Program. The design concept and scope of the project as modeled in the hot-spot analyses are consistent with those used in the regional emissions analysis for the *Regional Transportation Plan* and Transportation Improvement Program conformity determinations.

The regional emissions modeling demonstrated that future-year MSAT emissions in the Study Area (assuming build-out of the Recommended Alternative) would be lower than the 2012 emission estimates, even with a 47 percent increase in regional vehicle miles traveled in 2035. In the Study Area, constructing the Recommended Alternative would have a marginal effect on annual emissions in 2025 (less than a 1 percent difference in total annual emissions in 2025 and in 2035 between the Recommended Alternative and No-Action Alternative). With the Recommended Alternative in 2035, modeled MSAT emissions would decrease by 57 to 93 percent, with a 47 percent increase in vehicle miles traveled in the regional area compared with 2012 conditions.

FHWA now requests that the U.S. Environmental Protection Agency review the updated Air Quality Technical Report and provide any comments. A conference call between your Office and FHWA to discuss your agency's comments on the Report is scheduled for June 17, 2014.

We appreciate the involvement of the Region IX Office with this project and look forward to continuing our partnership. If you have any questions, contact Rebecca Yedlin, FHWA Environmental Coordinator at (602) 382-8979; or by email at Rebecca.Yedlin@dot.gov.

Sincerely,

for Karla S. Petty
Division Administrator

Enclosure

cc:
Ms. Colleen McKaughan (same as addressee)
Mr. Clifton Meek (same as addressee)
Mr. Ben Spargo, HDR Engineering, Inc., 3200 E. Camelback Rd., Suite 350, Phoenix, AZ 85018

United States Department of the Interior
U.S. Fish and Wildlife Service
Arizona Ecological Services Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513

In reply refer to:
AESO/SE
02EAAZ00-2013-TA-0365
02EAAZ00-2010-CPA-0056

June 10, 2014

Karla S. Petty, Division Administrator
Federal Highway Administration
Arizona Division
4000 North Central Avenue, Suite 1500
Phoenix, Arizona 85012-3500

From: Field Supervisor

Subject: South Mountain Transportation Corridor, City of Phoenix, Maricopa County, Arizona (ADOT Project No. 202L MA 054 H5764 01L)

Thank you for your correspondence requesting technical assistance from the U.S. Fish and Wildlife Service (FWS) in accordance with section 7 of the Endangered Species Act (Act) of 1973 (16 U.S.C 1531-1544), as amended. Your correspondence was dated May 14, 2014, and was received in this office on May 20, 2014. Your letter and Biological Evaluation (BE) described the proposed South Mountain Transportation Corridor project to take place in the City of Phoenix, Maricopa County, Arizona. This technical assistance is provided based on the information given in the BE. The Federal Highway Administration (FHWA) concluded that the proposed construction would have no effect on the Yuma clapper rail (*Rallus longirostris yumanensis*), and the Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). You also concluded the proposed action may impact the Tucson shovel-nosed snake (*Chionactis occipitalis klauberi*) and Sonoran Desert tortoise (*Gopherus morafkai*), both of which are candidates for listing under the Act, and requested our technical assistance. Please note that "no effect" determinations by Federal action agencies do not require concurrence or further comments from the FWS.

The proposed project includes the construction of an eight-lane divided freeway. The freeway would run through suburban, rural-agricultural, and undeveloped land, and cross over 49 ephemeral washes and the Salt River. In the area where it crosses the Salt River, the freeway would include a pier-supported bridge that would span the 100-year floodplain. Blasting would occur through the western end of South Mountain, resulting in ground disturbance of more than one acre of land. This project has been a part of the *Maricopa Association of Governments (MAG) Freeway/Expressway Plan* since 1985 when it was placed on the state highway system by the State Transportation Board. The corridor would connect Interstate 10 (I-10) (Maricopa Freeway) which is south of Phoenix, with

I-10 (Papago Freeway) which is west of the city. A more complete description of the proposed action can be found in the South Mountain Freeway Draft Environmental Impact Statement (DEIS).

Given the information provided in the letter and the nature of the project, we provide the following technical assistance for the Tucson shovel-nosed snake and Sonoran desert tortoise. If plans for this project change, or if new information becomes available on the distribution or abundance of a listed species in the area, this technical assistance and the need for section 7 consultation may need to be reconsidered.

Tucson shovel-nosed snake
The proposed project site is within the range of the Tucson shovel-nosed snake. The snake is more likely to be most active in April and May. If a construction action that may harm the snake (i.e., surface disturbance such as grading) could be performed during cool and cold weather months, this timing would help to minimize effects. For revegetation, we recommend using native shrubs, grasses and forbs that have a high value to rodents (which provide burrows for the snake) as well as insect and arachnid production (which provide food for the snake). Roads are a significant source of mortality for snakes because roads retain heat that snakes use for thermoregulation; therefore, we recommend that you refer to the Arizona Department of Transportation's Wildlife Funneling document (http://www.azdot.gov/docs/default-source/planning/wildlife_funnel_fencing_summary.pdf?sfvrsn=2) where funnel fencing for reptiles is described. Wildlife crossing are planned to be integrated into the construction, and we recommend that relevant funnel fencing techniques be incorporated in the design of these crossings.

Sonoran desert tortoise
We understand that your proposed project occurs within the distribution of the Sonoran desert tortoise. The corridor area is located within suitable habitat for the tortoise; therefore it is likely that the tortoise may occur in the action area. We recommend coordination with the Arizona Game and Fish Department, and incorporation of their *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects* (http://www.azgfd.gov/hgis/pdfs/Tortoisehandlingguidelines.pdf) into the proposed project. Surveying the ROW, prior to construction, for burrows, and avoidance of those sites is suggested. Minimization measures to reduce the invasion of potential nonnative plant species are also recommended.

Eagles and Migratory Birds
We encourage you to be aware of compliance with the Bald and Golden Eagle Protection Act (Eagle Act) and also the Migratory Bird Treaty Act (MBTA) when planning and implementing your project. Due to their wide-ranging wintering and foraging behavior, both eagle species could briefly occur within your project area. For information on protections under the Eagle Act, please refer to the regulatory definition of the term "disturb" (72 FR 31132) published in the Federal Register on June 5, 2007, and FWS's National Bald Eagle Management Guidelines (72 FR 31156) http://www.fws.gov/MississippiES/pdf/Eagle%20Guidelines.pdf. Additional information regarding eagles is available at: http://www.fws.gov/migratorybirds/BaldAndGoldenEagleMangaement.htm. Also, information specific to Arizona bald eagle conservation and recommended measures can be retrieved at: http://swbemc.org/pdf/NGTR173%20BaldEagleConservationAgreement.pdf.

Burrowing owls (*Athene cunicularia*) are another species known to occur along roadways, and are also protected under the MBTA. The Burrowing Owl Project Clearance Guidance for Landowners, a document put together by the Arizona Burrowing Owl Working Group, can be found at http://www.azgfd.gov/pdfs/w_c/owl/burrowingowlclearanceprotocol.pdf. For more information regarding the MBTA and permitting process, please visit the following web site: http://www.fws.gov/migratorybirds/mbpermits.html.

We recommend that you evaluate the project area to determine if surveys for eagles or owls are needed. If these birds are present, we encourage you to implement the guidelines and protocols described above for both eagles and owls.

For a more in-depth report of potentially protected species in the project area we recommend a review of the Arizona Game and Fish Department's Environmental Review On-Line Tool, found at http://www.azgfd.gov/hgis/.

In keeping with our trust responsibilities to American Indian Tribes, by copy of this memorandum, we will notify the Ak-Chin, Gila River Indian, Pascua Yaqui, Hopi, and Salt River Pima-Maricopa Indian Communities which may be affected by this proposed action and encourage you to invite the Bureau of Indian Affairs to participate in the review of your proposed action. We also encourage you to coordinate the review of this project with the Arizona Game and Fish Department.

Thank you again for your efforts to conserve endangered species. Please refer to consultation number 02EAAZ00-2013-TA-0365 for any further correspondence on this project. If you require further assistance or if you have any questions, contact Nichole Engelmann (ext. 237) or Mike Martinez (ext. 224).

Sincerely,

Brenda A Smith

for Field Supervisor
Steven L. Spangle

cc (electronic):
Ron Tipton, Bureau of Land Management, Lower Sonoran Field Office, Phoenix, AZ Regional Supervisor, Arizona Game and Fish Department, Phoenix, AZ
Branch Chief, Environmental Quality Services, Western Regional Office, Bureau of Indian Affairs, Phoenix, AZ
Manager Cultural Resources, Ak-Chin Indian Community, Maricopa, AZ
Tribal Historic Preservation Officer, Gila River Indian Community, Sacaton, AZ
Natural Resources Department, Hopi Tribe, Kykotsmovi, AZ
Land Department, Pascua Yaqui Tribe, Tucson, AZ
Cultural Resources Department, Salt River Pima-Maricopa Indian Community, Scottsdale, AZ

Assistant Field Supervisor, Fish and Wildlife Service, Flagstaff, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Biologists, Fish and Wildlife Service, Flagstaff, Phoenix, Tucson, AZ
(Attn: M. Alanen, J. Servoss, G. Beatty, B. Wooldridge, K. Robertson, J. Nystedt)

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